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Disaster-related statistics

Report of the Secretary-General**

Summary

The present report, which was prepared by the Statistics Division of the Department of Economic and Social Affairs of the Secretariat, in its capacity as secretariat of the Statistical Commission, in collaboration with the Economic and Social Commission for Asia and the Pacific, the Economic Commission for Europe, the Economic Commission for Latin America and the Caribbean and the United Nations Office for Disaster Risk Reduction, and in accordance with Economic and Social Council decision 2018/227 and past practices, contains a discussion of disaster-related statistics and highlights the growing relevance and greater focus of statistics relating to both hazardous events and disasters, given the importance of the Sendai Framework for Disaster Risk Reduction 2015–2030. The report includes a discussion of an increased focus and illustrates the need to develop a common position on this important and emerging field of statistics. It elaborates on the growing data demands and needs for disaster-related statistics, and the report takes stock of the current situation of activities around the world, with an emphasis on the constraints that developing countries face. The report contains a summary of the work of the main international and regional organizations that are active in statistics relating to hazardous events and disasters and demonstrates that there is already considerable complementarity, coordination and cooperation taking place on this topic under the purview of the Statistical Commission. In this regard, ways to continue to build and strengthen a common statistical framework and a network of experts among the multiple disciplines and areas of expertise involved are also explored in the report. The Statistical Commission is invited to express its views on the report and discuss the way forward.

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I. Introduction

1. Disasters disrupt national economies and affect lives, with significant direct and indirect effects on and costs to people, communities and countries. They remain one of the most important global development challenges facing humanity. Member States have the primary responsibility to protect their citizens, communities and cities from the social, economic and environmental impact of disasters.

2. It is accepted that extreme weather, earthquakes, tsunamis and other hazardous events will always occur. These events, however, can quickly elevate to become a disaster when a community or society is unable to cope with their impact and consequences. Societal functioning is seriously disrupted, leading to human, material, economic and environmental losses. It is therefore important to focus on reducing and managing the risks, ensuring that a hazardous event does not become a disaster.[1] How well the impact of a disaster is absorbed by communities and countries depends on the intensity of the event, its impact and severity over time and the level of preparedness and resilience of the affected communities and region.

3. While many disasters often occur with little or no warning, their impact is immediate, cross-cutting, complex, often dynamic, non-selective and, in our present world, more frequent and intense. Disasters can emanate from naturally occurring physical phenomena, primarily geophysical or meteorological, or can have anthropogenic or man-made causes, including industrial explosions, terrorism, oil spills and biological and humanitarian crises.

4. Sudden, or rapid onset, events, such as extreme weather, earthquakes, flooding and wildfires, tend to be more localized but are destructive for people, buildings and infrastructure. They can very quickly overwhelm preparedness, resilience and social well-being within and beyond the affected communities. Slower onset disasters, such as sea level rise, increasing temperatures, forest degradation, biodiversity loss and desertification, often span wide geographic areas and long time periods. They are therefore difficult to measure, quantify and adapt to. The impact of disasters, in particular those relating to extreme weather events, are also a growing concern owing to the compounding effects of climate change.

5. Because of their immediate destructive nature and the commensurate dependency on adequate community preparedness and resilience, disasters can quickly erode hard-won progress in developing countries, where resilience, resources and available capital are much lower. Developed countries are better prepared to handle the impact of disasters and their aftermath. In developing nations, where communities are much less prepared, disasters continue to disproportionately affect the poorest people because they do not have the resources to rebuild their homes and meet other basic needs, making them less able to recover in the medium to long term. Specific factors present in more vulnerable environments will therefore often quickly transform a hazardous event into a disaster.

6. Led by the Sendai Framework for Disaster Risk Reduction 2015–2030, which the General Assembly adopted on 3 June 2015,[2] all the global development agendas (e.g., the 2030 Agenda for Sustainable Development, the Paris Agreement on climate change, the SIDS Accelerated Modalities of Action (SAMOA) Pathway and the New

[1] A hazard is the process, phenomenon or human activity that may potentially cause loss of life, injury or other health impact, property damage, social and economic disruption or environmental degradation. Disaster is a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure and vulnerability, leading to human, material, economic and environmental losses and impacts. See www.unisdr.org/we/inform/terminology.

[2] See resolution 69/283.

Urban Agenda) place an emphasis on the social, economic and environmental impact of disasters and their negative effects on people, economies and countries, in particular developing countries and vulnerable sectors of society. The Sendai Framework provides mechanisms for countries to address disaster risk reduction and the building of resilience to disasters with a renewed sense of urgency in the context of sustainable development and poverty eradication and to integrate, as appropriate, both disaster risk reduction and the building of resilience into national, regional and local policies, plans and programmes. The 2030 Agenda contains specific calls for all countries to substantially increase their ability to adopt and implement integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework, holistic disaster risk reduction and management at all levels.

7. As one of its fundamental principles, the statistical community is obliged to provide relevant data concerning the economic, demographic, social and environmental situations of their countries to honour citizens' entitlement to public information. To meet this obligation, official statistics need to be used to explore the use of new data sources and technologies to fulfil the expectation of society for enhanced products and more efficient ways of working. This obligation has become more apparent in the context of the 2030 Agenda, in which the statistical community was explicitly requested to meet the new data demands for monitoring and reporting on progress in achieving the Sustainable Development Goals, their targets and subsequent global indicators.

8. Improved understanding of disaster risk reduction, including strengthening resilience and preparedness and the need for better data and statistical measurement to understand and assess current and future risks, is now required. In the past, disaster data needs tended to be addressed on an ad hoc basis, which included collecting the information at the time of an emergency, that is, in the response and recovery phases. There is nevertheless a growing importance and understanding that a holistic approach to hazardous event and disaster data collection, analysis and management can assist in achieving both short-term and long-term development goals and in identifying and reducing disaster risks. Disaster risk reduction requires informed decision-making, community engagement and partnerships and the open exchange and dissemination of disaggregated data, including by sex, age and disability. Such data can record the impact, effects and recovery of people, communities and their assets in multiple dimensions.

9. At its forty-ninth session, the Statistical Commission, in its decision 49/113, welcomed a greater focus on disaster-related statistics, given the importance of the Sendai Framework, and decided to include in the agenda for its fiftieth session a separate item on this topic, building on existing work in this emerging area. The present report contains a discussion of an increased focus on disaster-related statistics, including statistics relating to hazardous events and disasters; elaborates on the growing data demands and needs; and takes stock of the current situation of activities around the world, with an emphasis on the constraints that developing countries face. The report provides a summary of the work of the main international and regional organizations that are active in this emerging area of statistics and demonstrates that there is already considerable complementarity, coordination and cooperation taking place on this topic under the purview of the Commission. In this regard, ways to continue to build and strengthen a common statistical framework and a network of experts among the multiple disciplines and areas of expertise involved are also explored in the report. The Commission is invited to express its views on the report and discuss the way forward.

II. Demand for disaster-related statistics

10. Since 2005, and within the construct of the Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters, there has been an international consensus on the need to "develop systems of indicators of disaster risk and vulnerability at national and sub-national levels that will enable decision-makers to assess the impact of disasters on social, economic and environmental conditions and disseminate the results to decision-makers, the public and population at risk" (A/CONF.206/6, chap. I, resolution 2). The demand for internationally comparable methods for producing statistical evidence for disaster risk reduction received renewed and enhanced attention internationally in 2015 with the adoption by the General Assembly of the Sendai Framework and with similar prominent inclusion of disaster risk reduction targets in the Sustainable Development Goals, targets and indicators of the 2030 Agenda.

11. The Sendai Framework has shifted the earlier focus on reducing vulnerability towards risk reduction and assessment, mirroring government demands for improving prevention and preparedness efforts. The goal of the Sendai Framework is to "prevent new and reduce existing disaster risk through the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery, and thus strengthen resilience".[3] Implementing these measures requires information beyond operational disaster data. There is also a need for disaster measurements and statistics across disasters, time and geographical locations and for the integration of disaster information with social, economic and environment statistics.

12. In the context of the globally agreed development policy frameworks and a global indicator monitoring system, governments have placed increased attention on the development of disaster-related statistics. This includes, but is not limited to, statistics on hazardous events, disaster occurrences and their impact, risk assessment, management and reduction, and post-disaster impact assessments, which rely on analyses of a variety of sources of data on the population, society and the economy. The sources of these data include censuses, surveys, administrative registers and other instruments used in official statistics for multiple purposes. Geo-referenced statistics and other location information on population, businesses and infrastructure also support the assessment of the number of affected people and any other possible impact in cases of emergency response and recovery.

13. Each disaster not only is highly unpredictable in its occurrence and impact, but also creates significant changes and challenges to the social, economic and environmental context for affected regions. In addition, disasters and their associated risk is unevenly dispersed in and among countries and over time. To identify authentic trends, rather than random fluctuations or effects of extreme values, much of the analyses of statistics relating to hazardous events and disasters requires a coherent time series and depends on clear and well-structured statistical compilations. This context places an exceptionally high value on the harmonizing of measurement for related statistics over time and, as much as feasible, among countries and regions.

14. The collections of these statistics needs to be structured and documented in such a way as to maintain the links to relevant characteristics of the underlying disaster occurrence (e.g., timing, location and hazard type), while also remaining accessible to users as inputs for cross-disaster analyses (e.g., monitoring indicators over time or

[3] General Assembly resolution 69/283, annex II, para. 17.

in models for predicting and minimizing disaster risk). A basic challenge in disaster-related statistics is therefore to make statistics accessible for use in multiple forms and purposes of analyses, while maintaining harmonized and coherent compilations through the structured use of metadata.

15. Given that this area of statistics is a new endeavour in nearly all countries, there is a strong demand for technical guidance and the sharing of tools and good practices internationally. This includes translating the agreed concepts and definitions into specific instructions and technical recommendations for the production and dissemination of statistics. At present, countries have different practices for compiling data and prioritizing and preparing statistical tables relating to disasters that make it difficult to make comparisons or conduct time series analyses covering multiple disasters. More attention needs to be given to harmonizing the use of terminologies and the development of more "geospatially relevant" statistics and indicators to produce more quantitative and integrated evidence at the national level. In many cases, these data are produced outside the national statistical system, and national statistical offices are often not involved in compiling the data.

16. Geospatial information has been widely recognized as an important aspect of disaster risk reduction and management. At the time of a crisis, communication, coordination and collaboration among all stakeholders is vital at all levels of decision-making throughout the emergency cycle. Knowing where to respond, what with, how and in a timely manner is critical. Large-scale disasters, however, continue to have a devastating impact on people, buildings and infrastructure, demonstrating the gap that remains between the state of geospatial information technologies, Earth observation data and statistics and informed decision-making. This situation highlights the need to find solutions aimed at improving not only the availability and accessibility of quality and relevant information, but also the coordination and communication among stakeholders at all levels of decision-making throughout the phases of disaster risk management.

III. Ongoing work in disaster-related statistics

17. While the topic of disaster-related statistics is relatively new for the Statistical Commission, the statistical community, in close collaboration with the United Nations Office for Disaster Risk Reduction and other international organizations, has made significant progress in guiding the work and coherence of national statistical offices towards the implementation of statistics for disaster risk management, reduction, monitoring and reporting. These efforts have had the added benefit of realizing greater harmonization of statistics between and among Member States and international organizations.

18. Key outcomes of that work include a disaster-related statistical framework defining the scope and providing a basic range for these statistics; defining the role of national statistical offices in producing these statistics and providing recommendations for implementation; providing the link with environment statistics, as captured in the Framework for the Development of Environment Statistics[4] and the work on System of Environmental-Economic Accounting Experimental Ecosystem Accounts; consideration of the strengths of official statistics and the importance of using official statistics in disaster risk monitoring and management; and having national statistical offices be involved in developing technical guidelines relating to the monitoring of the implementation of the Sendai Framework.

[4] *Framework for the Development of Environment Statistics (FDES 2013)* (United Nations publication, Sales No. 14.XVII.9).

19. The following section provides an overview of the ongoing work in statistics relating to hazardous events and disasters of the main international and regional organizations active in this area.

A. Statistical work on disasters in the Statistics Division

20. In the area of environment statistics, the Statistics Division of the Department of Economic and Social Affairs of the Secretariat produced the Framework for the Development of Environment Statistics, with the support of the Expert Group on the Revision of the Framework for the Development of Environment Statistics.[5] The Statistical Commission, at its forty-fourth session, endorsed the Framework as the basis for strengthening environment statistics programmes in countries. It is a flexible, multi-purpose conceptual and statistical framework that is comprehensive and integrative in nature. It organizes environment statistics into six components, and each one is broken down into subcomponents and statistical topics. One of the six components, component 4 on extreme events and disasters, organizes statistics on the occurrence of extreme events and disasters and their impact on human well-being and the infrastructure of the human subsystem. In component 6, on environmental protection, management and engagement, one of the subcomponents focuses on the preparedness and management of disasters.

21. The Statistics Division is also developing a manual on the basic set of environment statistics, in collaboration with the Expert Group on Environment Statistics, in which, among other things, the Economic Commission for Europe (ECE) and the Economic and Social Commission for Asia and the Pacific (ESCAP) contribute actively. The objective of the manual is to produce and disseminate a set of methodology sheets, or metadata, for the collection or compilation of all environment statistics of the Basic Set of Environment Statistics contained in the Framework for the Development of Environment Statistics. Several methodology sheets have been completed; the one on disasters is being finalized.

22. With regard to climate change statistics, the Statistical Commission, at its forty-seventh session, noted the link between climate change and disaster reduction and requested that the Sendai Framework be considered in the development of climate change statistics and indicators. As part of the work of the Division to develop a global set of climate change statistics and indicators, as requested by the Commission, the close link between climate change statistics and disaster-related statistics is strongly being taken into account.

23. With regard to the geospatial information requirements to support statistics relating to hazardous events and disasters, the Division is secretariat for the Committee of Experts on Global Geospatial Information Management. To institutionalize the integration of geospatial information and its services into emergency response and disaster risk reduction, the Committee of Experts developed the Strategic Framework on Geospatial Information and Services for Disasters[6] to serve as a guide for Member States in their national activities to ensure the availability and accessibility of quality geospatial information and services in all phases of the emergency cycle and to reach out and engage with decision-makers. The Strategic Framework was adopted by the Committee of Experts in 2017 and subsequently endorsed by the Economic and Social Council in July 2018.

24. It is recommended in the Strategic Framework on Geospatial Information and Services for Disasters that geospatial databases and information products be

[5] See https://unstats.un.org/unsd/envstats/fdes/fdes_egm.cshtml.

[6] See Economic and Social Council resolution 2018/14.

developed, maintained and updated on the basis of common standards, protocols and processes as important tools in every decision-making process in all phases of disaster risk management. In addition, it is stipulated, among other things, that each Member State shall be in the position to generate, maintain and provide quality geospatial information and services in all phases of disaster risk management, that geospatial data and information shall be openly accessible to the disaster risk management community, as appropriate, and that the implementation of the Strategic Framework shall encourage data-sharing, interoperability and harmonization among neighbouring countries in order to respond efficiently to cross-border disasters.

B. Statistical work at the Economic Commission for Europe relating to hazardous events and disasters

25. The Bureau of the Conference of European Statisticians set up a task force on measuring extreme events and disasters in February 2015[7] as a follow-up to an in-depth review conducted in October 2014. The main objective of the task force is to clarify the role of official statistics in providing data relating to hazardous events and disasters and to identify practical steps for national statistical offices, in coordination with national agencies responsible for disaster management, to support disaster management and risk reduction.

26. From the beginning, the task force has cooperated closely with the Expert Group on Disaster-related Statistics in Asia and the Pacific and the United Nations Office for Disaster Risk Reduction.

27. The task force provided substantive contributions to the work of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction. The working group agreed on the set of indicators to measure global progress in the implementation of the Sendai Framework and the related terminology, which provides an important basis for recommendations to be given to national statistical offices. On the suggestion of the task force, the working group included in its report to the General Assembly the recommendation to involve the statistical community in the follow-up work to operationalize the indicators of the Sendai Framework.

28. The task force initiated several national case studies on data relating to hazardous events and disasters (from Armenia, Brazil, Ireland, Italy, Mexico, the Philippines and Turkey). The case studies illustrate the roles that national statistical offices can play in disaster risk management, which statistics on hazardous events and disasters are produced and disseminated regularly and how new data sources (e.g., geospatial information) can help to produce these statistics and make them fit for purpose. Some of the case studies also contain discussions of the regulations that give national statistical systems the mandate to produce these statistics and to provide data quickly for the affected area in cases of emergency.

29. It is planned that the final report of the task force, with recommendations to national statistical offices, will be submitted to the 2019 Conference of European Statisticians plenary session for endorsement. The report includes recommendations

[7] Members of the task force are Armenia, Italy (Chair), Mexico, New Zealand, the Republic of Moldova, South Africa and Turkey, as well as the Food and Agriculture Organization of the United Nations, the Joint Research Centre, the European Space Agency, Eurostat, the Economic Commission for Latin America and the Caribbean, the Economic and Social Commission for Asia and the Pacific and its Expert Group on Disaster-related Statistics in Asia and the Pacific, the United Nations Office for Disaster Risk Reduction, the World Health Organization and the World Meteorological Organization. The Group on Earth Observations participates in the work of the task force.

for a set of core roles and tasks for national statistical offices relating to statistics on hazardous events and disasters, taking into account typical strengths of official statistics and the diverse institutional settings in countries. Furthermore, the report includes a list of practical steps to build capacity for these statistics in national statistical systems.

C. Statistical work on disasters at the Economic and Social Commission for Asia and the Pacific

30. In May 2014, the Economic and Social Commission for Asia and the Pacific (ESCAP) established the Expert Group on Disaster-related Statistics in Asia and the Pacific, and a network of expertise was assembled from national statistical offices and national disaster management agencies from the Asia-Pacific region, as well as from many relevant international agencies that participated from regional and global perspectives. During the next four years, the Expert Group collected, reviewed and discussed current practices in countries and the statistical requirements from users, including for global monitoring of the Sendai Framework and the Sustainable Development Goals, among other policy-relevant purposes at national and local levels. The Expert Group has conducted five in-person meetings, collected feedback at several related seminars and side events and conducted three rounds of open online consultations towards the development of statistical recommendations aimed at improving the quality, including the international comparability, of disaster-related statistics from official sources.

31. Although it is a regional network of experts with a regional mandate, one of the core principles of the Expert Group's method of work is to coordinate closely and ensure alignment with related initiatives in other regions and at a global level. This includes, in particular, coordination with the ECE task force on measuring extreme events and disasters and collaborating closely with the United Nations Office for Disaster Risk Reduction and other stakeholders to ensure full alignment with the concepts, terminologies and priorities of the Sendai Framework. The engagement of a broad range of experts from stakeholder agencies, groups and related initiatives in the disaster management or official statistics domains helped to assure the quality of guidance in those statistical frameworks and ensure that the recommendations built, as much as possible, on existing statistical standards and on the internationally agreed concepts and indicators for disaster risk reduction.

32. A main output of the Expert Group is a disaster-related statistics framework, a technical guideline that is designed for national statistical systems and applicable at multiple scales. The statistical content of the framework was endorsed by the ESCAP Committee on Statistics (May 2018). The framework's guidelines have global relevance and are universally applicable as a tool to help responsible agencies to build their capacities for producing internationally harmonized disaster-related statistics. The framework was developed through a multi-stakeholder and transparent process of consultation with a broad range of experts, including international agencies, related groups (e.g., the ECE task force on measuring extreme events and disasters and the Expert Group on International Statistical Classifications). The purpose of this technical guidance is to help to encourage the development of a common and nationally standardized basic range of disaster-related statistics, which is comparable to those of other countries.

33. The disaster-related statistics framework is currently being applied towards the design of technical assistance for the development of case studies and statistical training materials in counties in the Asia-Pacific region. It is expected that the framework could also be a good base model to serve similar purposes in other regions,

subject to further review and endorsement by the Statistical Commission. The global review and endorsement of the framework is a recommended step towards greater harmonization and enhanced involvement of stakeholder institutions throughout the region for developing official statistics for use in disaster risk reduction policies.

D. Statistical work on disasters at the Economic Commission for Latin America and the Caribbean

34. The Economic Commission for Latin America and the Caribbean (ECLAC) has contributed to providing technical assistance in and training countries on the field of disaster statistics and indicators for a long time, given that the region is particularly concerned both by the effects of climate change and by the occurrence and impact of increasingly frequent and more intense extreme events and disasters, as shown in the ECLAC Statistical Yearbook, the CEPALSTAT database and various analytical publications. The capacity-building activities have been incorporated into the ECLAC environment statistics work programme in collaboration with other regional commissions and the Division (i.e., within the Expert Group on Environment Statistics). Since 2016, the Statistics Division of ECLAC has reinforced its services to countries in this field and is actively seeking partnerships at the global and regional levels in order to carry out a regional programme of climate change and disaster statistics and indicators. The need for technical assistance missions and training is continually growing in Latin American and Caribbean countries, in particular in small island developing States and Central American countries.

35. The ECLAC Statistical Conference of the Americas established a working group[8] at its ninth session, in November 2017 in Aguascalientes, Mexico. The United Nations Office for Disaster Risk Reduction, through its Regional Office for the Americas, contributes as the technical secretariat, with support from the Statistics Division of ECLAC. The main objective is to integrate data and produce statistics and indicators reporting on the occurrence, impact and risk reduction of disasters into national statistical systems, thus enhancing the comparability, accuracy, consistency and high quality of disaster statistics and indicators, in accordance with the Fundamental Principles of Official Statistics. The working group is building on the valuable work undertaken by the task force on measuring extreme events and disasters and the Asia-Pacific Expert Group on Disaster-related Statistics in Asia and the Pacific, considering the specific characteristics of Latin America and the Caribbean in terms of environmental resources, human exposure, extreme events and disaster occurrence, impact and preparedness.

36. ECLAC is statistically supporting the regional working group carrying out work to identify national stakeholders, followed by a thorough data availability assessment on the Sendai Framework and the Sustainable Development Goal disaster indicators at the national level, beginning with the working group members. In June 2018, the working group organized its first face-to-face meeting following the sixth Regional Platform for Disaster Risk Reduction in the Americas, held in Cartagena, Colombia, which was attended by eight national statistical offices in Latin America for the first time. In November 2018, a joint ECLAC-United Nations Office for Disaster Risk Reduction specific assessment and technical assistance mission on disaster statistics was carried out in the Dominican Republic as a pilot country, allowing for an inter-institutional assessment describing data series, statistics and indicators that are available and those that are needed to report on nationally prioritized policies and

[8] Members of the working group are Bolivia (Plurinational State of), Chile, Cuba, the Dominican Republic, Ecuador, Mexico, Nicaragua, Paraguay and Peru, the latter two of which are the coordinating countries.

targets, as well as Sustainable Development Goal and Sendai Framework reporting needs. In addition, the working group also met face-to-face in Panama City in December 2018 to follow up on its work programme and to discuss activities planned for 2019.

E. Statistical work on disasters at the United Nations Office for Disaster Risk Reduction

37. The United Nations Office for Disaster Risk Reduction has a mandate to support Member States in the implementation and monitoring of the Sendai Framework.

38. An open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction was set up in accordance with the recommendation contained in the Sendai Framework. The General Assembly endorsed the recommendations of the working group in February 2017. Moreover, given that the Sustainable Development Goals include indicators that are related to disaster risk reduction under Goals 1, 11 and 13, the Inter-Agency and Expert Group on Sustainable Goal Indicators recognized the working group's recommendations as common indicators for the same and identified the United Nations Office for Disaster Risk Reduction as the custodian agency of the related indicators. This was also endorsed by the Statistical Commission at its forty-eighth session, in March 2017.

39. Based on the above, to further the monitoring of the Sendai Framework, the United Nations Office for Disaster Risk Reduction was tasked with developing an online Sendai Framework monitor that would be the mechanism for all Member States to report on their progress. The United Nations Office for Disaster Risk Reduction therefore undertook a comprehensive process that included the following key steps:

(a) A comprehensive survey was conducted among Member States (i.e., a Sendai Framework data readiness review) that enabled them to undertake a self-assessment of their abilities to be able to report against each of the 38 global indicators of the seven global targets of the Sendai Framework;

(b) A prototype of the online Sendai Framework monitor was produced on the basis of a consultation with Member States and other partners. The actual monitor was developed on the basis of that prototype, in partnership with the Office of Information and Communications Technology enterprise application centre based in Bangkok;

(c) Technical guidance notes were developed and made available in January 2018 as the main guiding tool for assisting Member States in the compilation of data for including in the monitor. In the development of the notes, the United Nations Office for Disaster Risk Reduction worked closely with the Division and statistical offices of the regional commissions, in particular ECE and ESCAP, to support standards-setting relating to disaster statistics. National statistical offices also contributed to the development of the technical guidance;

(d) The Sendai Framework monitor was launched on 1 March 2018. Information reported in the monitor has already been provided to the report on the Sustainable Development Goals of the 2018 high-level political forum on sustainable development. For this, the United Nations Office for Disaster Risk Reduction has been working very closely with the Goals monitoring unit of the Division in support of the Inter-Agency and Expert Group on Sustainable Goal Indicators. As a result, all the Sendai Framework-related indicators have been classified as tier I or tier II in the Goal classification. A second reporting deadline was set for October 2018, and the data provided by Member States will form the basis of the 2019 Global Assessment

Report on Disaster Risk Reduction, to be launched at the Global Platform for Disaster Risk Reduction in May 2019;

(e) In order to support Member States in reporting through the online Sendai Framework monitor, the United Nations Office for Disaster Risk Reduction has been undertaking a comprehensive capacity development exercise in all the regions through the leadership of its regional offices. The primary target audiences of the regional, subregional and national-level training have been the national disaster management organizations, the national statistical offices, appropriate sectoral ministries responsible for data-sharing and other stakeholders, as appropriate;

(f) In addition to the reporting for the global targets and indicators mentioned above, in accordance with the recommendation of the open-ended intergovernmental expert working group on indicators and terminology, a second phase of the monitor has also been implemented in which Member States have an opportunity to develop their own nationally determined custom targets and indicators to support the monitoring of their national strategies for disaster risk reduction and produce national reports, as required. Moreover, the Sendai Framework monitor will also allow regional intergovernmental organizations to monitor and report on progress in implementation in their regions.

Disaster loss accounting

40. The United Nations Office for Disaster Risk Reduction has been working with Member States for more than one decade to promote disaster loss accounting. To date information on disaster loss accounting is available for more than 100 countries. In particular, the Office assists Member States in recording and analysing disaster trends and their impact in a systematic way through an open source disaster inventory system called DesInventar. With the adoption of the 38 indicators to measure the progress against the achievement of the seven targets of the Sendai Framework, the Office retrofitted DesInventar and relaunched it at the beginning of 2018. This system is a methodology and software that enables the collection of detailed and homogeneous loss and damage data about disasters at all scales (temporal and spatial) and allows the capture of disaster information that is location-stamped and time-stamped, also enabling the analysis of disaster loss and damage through charts, graphs and reports. The tool helps countries to understand disaster trends, patterns and impact in a systematic way and facilitates dialogue and policy discussions on disaster risk reduction.

Global Risk Assessment Framework

41. In 2018, the United Nations Office for Disaster Risk Reduction convened an expert meeting on the Global Risk Assessment Framework, bringing together 30 eminent experts in hazard and risk modelling from all regions of the world to examine existing risk models in public and private domains and identify gaps and opportunities for enhanced collaboration towards a global assessment of risk within the broader scope of the Sendai Framework and the 2030 Agenda. As recommended at the expert meeting, the United Nations Office for Disaster Risk Reduction initiated the development of the Global Risk Assessment Framework to provide risk information across the full spectrum of hazards and risks covered under the Sendai Framework, with an emphasis on vulnerability, exposure and impact throughout sectors and geographies, to enhance risk-informed decision-making. The design and development of the Global Risk Assessment Framework will continue in the same vein by following a broad consultative process, with guidance from an expert group. It will highlight the changes in global risk assessment post-2015. The evolution in approach will more accurately reflect risk in society, with an understanding that data on

information on vulnerability (social and environmental) is severely underdeveloped and will be a priority area for expanded work.

42. The Global Risk Assessment Framework will be launched at the Global Platform for Disaster Risk Reduction in May 2019. In addition, the United Nations Office for Disaster Risk Reduction has also launched a national disaster risk assessment guide, which was the result of a collaboration with more than 100 leading experts. The guide focuses on the Sendai Framework's first priority for action (understanding disaster risk), which is the basis for all disaster risk reduction measures.

Agreeing on common indicators with the climate change agenda

43. The United Nations Office for Disaster Risk Reduction is also focusing on ensuring a closer cohesion and coordination of the Sendai Framework with the Paris Agreement. Whereas initial coherence between the Sendai Framework and the 2030 Agenda has already been achieved at the global level, namely, the work carried out to make certain that the Sendai Framework monitoring process contributes to the high-level political forum on sustainable development, there is a need to continue to work and explore the practicalities of delivering resilience and monitoring progress through a coherent and mutually reinforcing approach within the broader post-2015 agenda, which has to include the Paris Agreement.

44. One area of focus is the work carried out by the Adaptation Committee and the need to identify concrete opportunities for strengthening resilience, reducing vulnerabilities and increasing the understanding and implementation of adaptation action, leveraging the Sendai Framework monitoring process, specifically the already agreed indicators, to monitor the progress and impact of specific adaptation activities.

45. The United Nations Office for Disaster Risk Reduction supported an expert meeting on national adaptation goals/indicators and their relationship with the Sustainable Development Goals and the Sendai Framework, organized by the Adaptation Committee and held in Tokyo on 24 and 25 July 2018. The outcome of that meeting was considered by the Adaptation Committee at the fourteenth meeting of its Executive Committee, and the next steps have been included in the workplan for the period 2019–2021.

IV. Coordination and cooperation

46. The previous sections summarized the work of the main international and regional organizations active in statistics relating to hazardous events and disasters. While such statistics are a relatively new endeavour in nearly all countries, there is already considerable complementarity, coordination and cooperation taking place on this topic under the purview of the Statistical Commission. It is therefore important to recognize that the statistical community is not starting from scratch and that it is not working in isolation. In fact, this report validates the growing data demands, technical guidance and sharing of tools and good practices for statistics relating to hazardous events and disasters and illustrates the need to develop a common position towards implementing this important and emerging field of statistics.

47. In this regard, the key elements required to continue to build and strengthen a common statistical framework and a network of experts for disaster-related statistics among the multiple disciplines and areas of expertise involved are already in place. Continued collaboration among the United Nations entities will enable an increased focus on the development of global statistical guidance, with the aim of providing countries with globally harmonized tools for building a common basic range of

statistics relating to hazardous events and disasters based on guidance already developed, as described previously in this report.

48. There is, however, currently no formalized mechanism in place to ensure long-lasting cooperation across disciplines and organizations for these kinds of statistics. At present, coordination and cooperation occur on an ad hoc basis in technical expert groups, which themselves have a defined body of work. A formalization of the coordination and cooperation efforts may now be needed to develop common strategies, address the diverse community of practice, jointly develop methodologies and terminologies and efficiently support sustainable implementation.

V. Way forward

49. The global development agendas, guided by the Sendai Framework, call for all countries to address disaster risk reduction and the building of resilience to hazardous events and disasters with a renewed sense of urgency and to integrate, as appropriate, both disaster risk reduction and the building of resilience into national policies, plans and programmes at all levels. The Sendai Framework has shifted focus towards risk reduction and management, requiring more detailed data and information beyond traditional operational disaster response data. There is now an urgent need for disaster measurements and statistics throughout disaster, time and geographical locations and for the integration of disaster information with social, economic and environment statistics.

50. In order to meet these emerging needs, the statistical community may wish to continue to build and strengthen a common statistical framework and a network of experts for disaster-related statistics among the multiple disciplines and areas of expertise involved, in particularly disaster risk reduction experts, statisticians and geospatial information experts. In terms of advancing the methodological development of this work, the ESCAP disaster-related statistics framework contains technical guidelines that, although developed for the Asia-Pacific region, provide a robust model and serve as a good starting point, have global relevance and are universally applicable as a tool to help responsible agencies to build their capacities for producing internationally harmonized statistics relating to hazardous events and disasters.

51. A universal statistical framework, as a commonly agreed measurement framework, has the potential to address challenges for creating coherence among data sources and to incorporate statistics relating to all types of hazardous events and disasters, regardless of scale, towards a nationally centralized and internationally coherent basic range of statistics relating to hazardous events and disasters. The statistical framework will need to be comprehensive, yet flexible enough to capture and calculate a broad range of indicators for facilitating other types of analysis. This will quickly strengthen international collaboration for coherence of these statistics between countries and over time.

52. Mechanisms to engage with a broader network of partners and stakeholders, including regional commissions, with a focus on statistics relating to hazardous events and disasters can also be explored. This will assist countries in strengthening capacities for disaster management agencies, national statistical offices and other related contributors of official data to meet reporting requirements for evidence-based approaches to achieving the goals and targets in the Sendai Framework and the 2030 Agenda.

53. Taking into account the traditional strengths of national statistical offices and the institutional context for national disaster risk management, theses offices can

fulfil different roles. Such roles can be grouped into core roles and tasks that should be undertaken by any national statistical office and additional tasks that could be incorporated into the functions and responsibilities of the offices, and which some have already implemented. The core roles reflect typical strengths of national statistical offices, such as producing time series of statistics and indicators, providing baseline information that is fit for purpose for disaster risk management and supporting the assessment of social, environmental and economic impact. The additional tasks can include leading impact assessments, coordinating geographical information services and conducting risk assessments.

54. The Statistics Division, ECE, ESCAP, ECLAC and the United Nations Office for Disaster Risk Reduction are committed to providing technical assistance to countries to strengthen their capacities to produce statistics relating to hazardous events and disasters. Their expertise and guidelines are available to foster these efforts. Developing statistics in new areas, however, faces resource constraints and relies on the goodwill and support of Member States and the United Nations system. To achieve a substantial improvement in statistics relating to hazardous events and disasters, more donor support may be needed to benefit Member States, in particular their national statistical offices and national partners.

VI. Points for discussion

55. **The Statistical Commission is invited to:**

(a) **Express its views on the report and discuss the way forward, in particular on the coordination of the various initiatives, including through the establishment of a network of experts;**

(b) **Urge the international statistical community to expand its capacity-building efforts in statistics relating to hazardous events and disasters;**

(c) **Consider modalities for the establishment of a formal mechanism for sustaining the cooperation and coordination of statistics relating to hazardous events and disasters among expert communities, organizations and regions.**